DC | HEALTH
GOVERNMENT OF THE DISTRICT OF COLUMBIA

Rabies Surveillance and Investigation Report, 2018

In 2018, a total of 261 animal specimens were submitted to the District of Columbia Department of Health (DC Health) for rabies testing (Figure 1). The District of Columbia Public Health Laboratory (DC PHL) tested the specimens using the Direct Fluorescent Antibody (DFA) test, the current gold standard test for rabies[1].

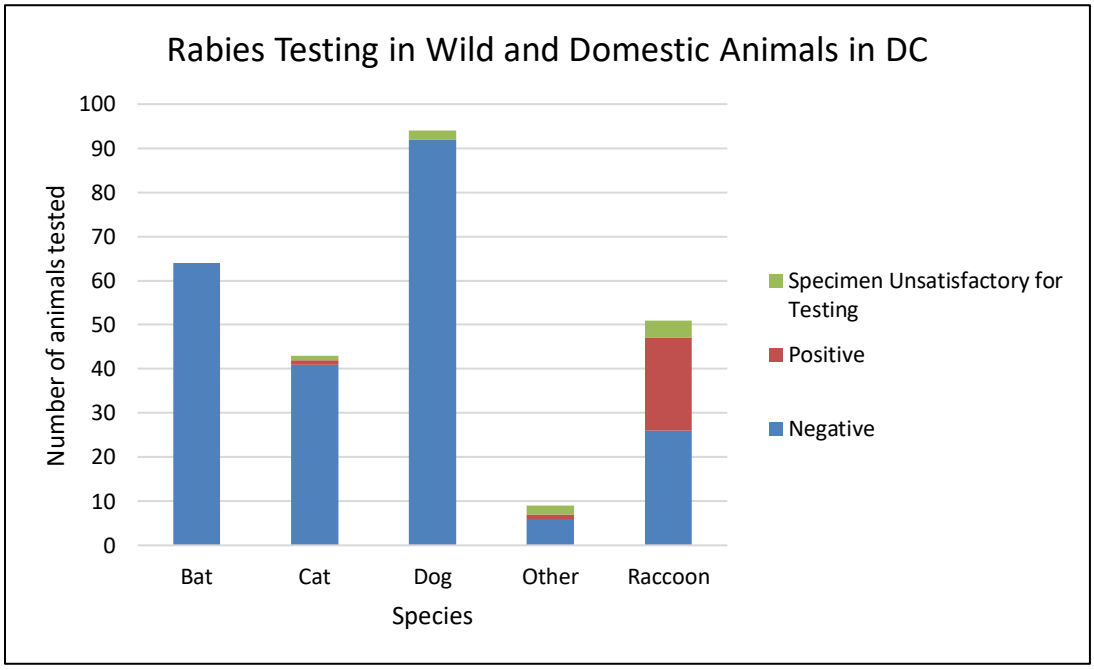

Figure 1. Wild and Domestic Animals tested for Rabies in DC, 2018.

The major rabies variants in the eastern United States (US) occur among raccoons, skunks, red and gray foxes, coyotes, and multiple insectivorous bat species. The raccoon rabies variant (RRV) is enzootic in eastern US including the District of Columbia (DC)[2].

Approximately 8.8% (23 out of 261) of samples submitted tested positive for the rabies virus. This was similar to findings in 2017 when less than 12% of samples submitted tested positive for rabies. The most commonly tested animal species were dogs (n=94), followed by bats (n=64), and raccoons (n=51). Raccoons most commonly tested positive, with 41.2% (n=21/51) of submitted raccoon samples being positive for rabies. This showed a decrease compared to 2017 when 52.6% of submitted raccoons tested positive. However, the percentage of rabid raccoons among all animal specimens submitted for testing (19.5%, n=21/261) showed an increase from the previous year (10.2%, n=20/196).

Other species that were submitted for rabies testing included bats (n=64), foxes (n=5), opossums (n=2), groundhogs (n=1), and deer (n=1). No bats that were submitted tested positive for rabies, one domestic animal (cat) tested positive on the DFA test, and was sent to CDC for confirmatory Polymerase Chain Reactive (PCR) test which confirmed its positive status and infection with the eastern raccoon variant of rabies virus.

Last updated: November 25, 2019

Table 1 summarizes rabies test results by species.

Species	Negative	Positive	Unsatisfactory for Testing	Total	% Positive
Bat	64	0	0	64	0
Cat	41	1	1	43	2.33
Dog	92	0	2	94	0
Raccoon	26	21	4	51	41.18
Fox	4	1	0	5	20
Groundhog	1	0	0	1	0
Deer	1	0	0	1	0
Opossum	0	0	2	2	0
Total	229	23	9	261	8.81

Table 1. Final Test Results of Rabies in animals by species, DC, 2018.

In 2018, 1442 reports of animal encounters in DC were reported to DC Health. Figure 2 below shows the total numbers for each type of animal exposure, such as domestic-on-human, wildlife-on-human, and several others. The most frequently reported event involved a domestic animal coming into contact with a person (n=911). Dogs accounted for 77% of all domestic-on-human encounters, and cats accounted for the rest. After investigation of human encounters with animals, most (77.3%) were found to have no risk for rabies transmission (n=609/788). Rabies risk is determined based on the type of animal, rabies vaccination status for domestic pets, successful completion of quarantine periods, or negative rabies test result for animals that were able to be captured and euthanized.

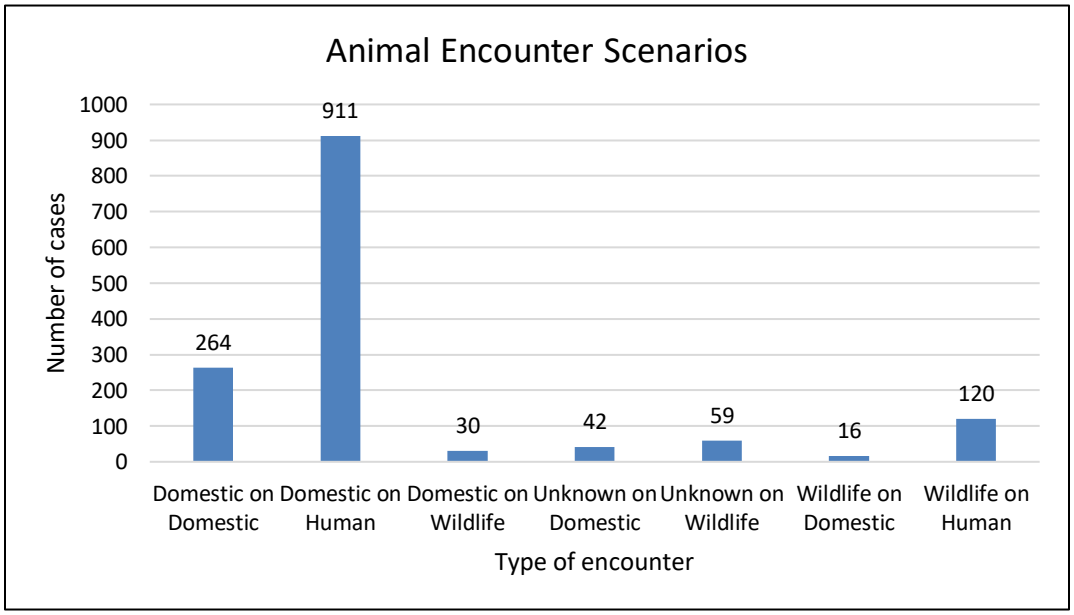

Figure 2. Total number of encounters by type reported DC, 2018.

Figure 3 is a map showing rates of animal bite reports by location in DC. Of the cases of animal bites reported to DC Health, the highest concentration of animal bite reports originated from Ward 7 (4.7-4.8 per 100,000 persons), followed by Wards 4, 5, and 6, each with a rate of 3.0-4.6 per 100,000 persons. The true number of animal bite occurrences may not be known due to possible underreporting of cases from each ward.

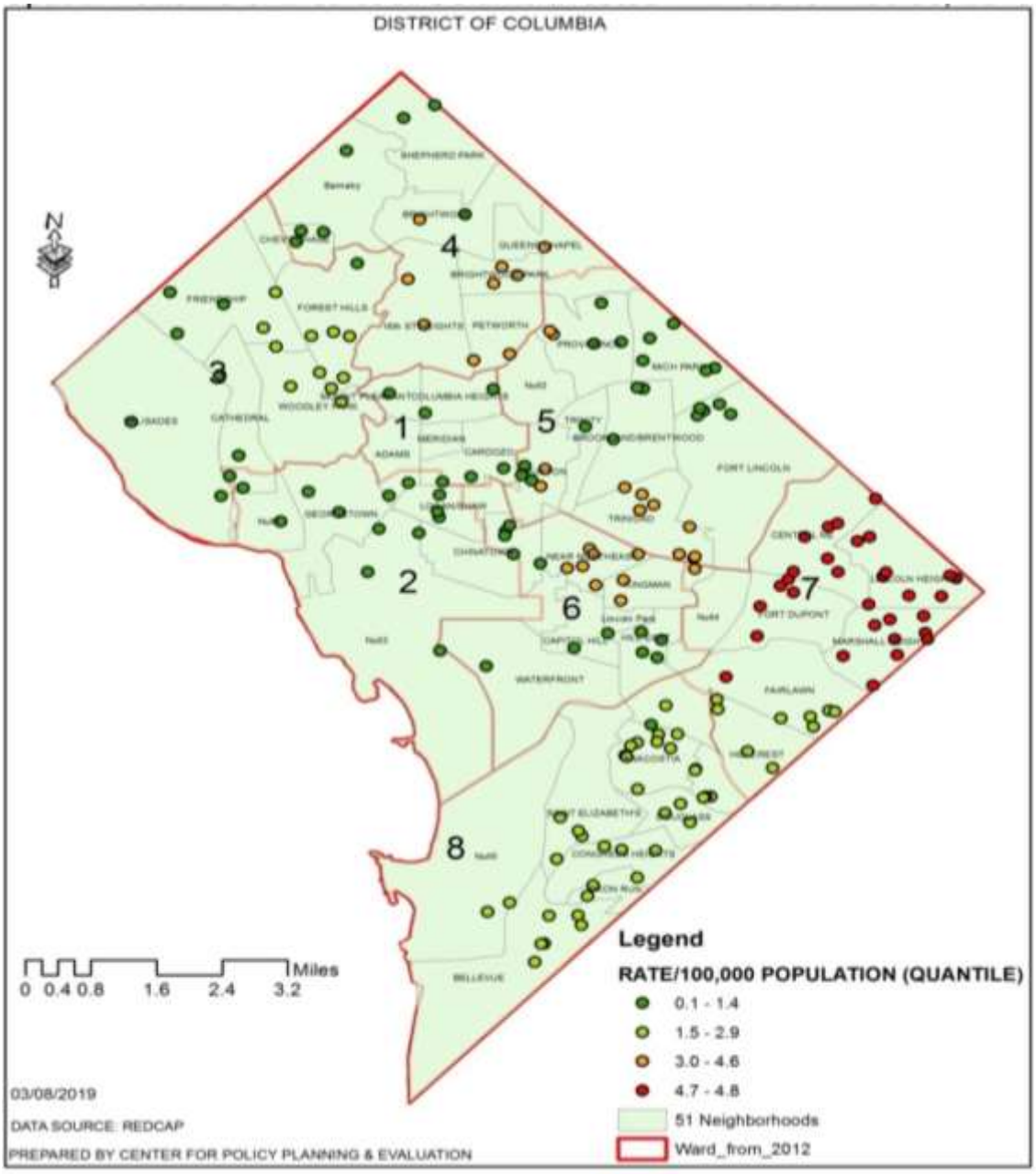

Figure 3. Spatial patterns of reports of animal bites by Ward — DC, 2018

Figure 4 is a map displaying cases of rabies in wild and domestic animals that were submitted to DC Health in 2018.

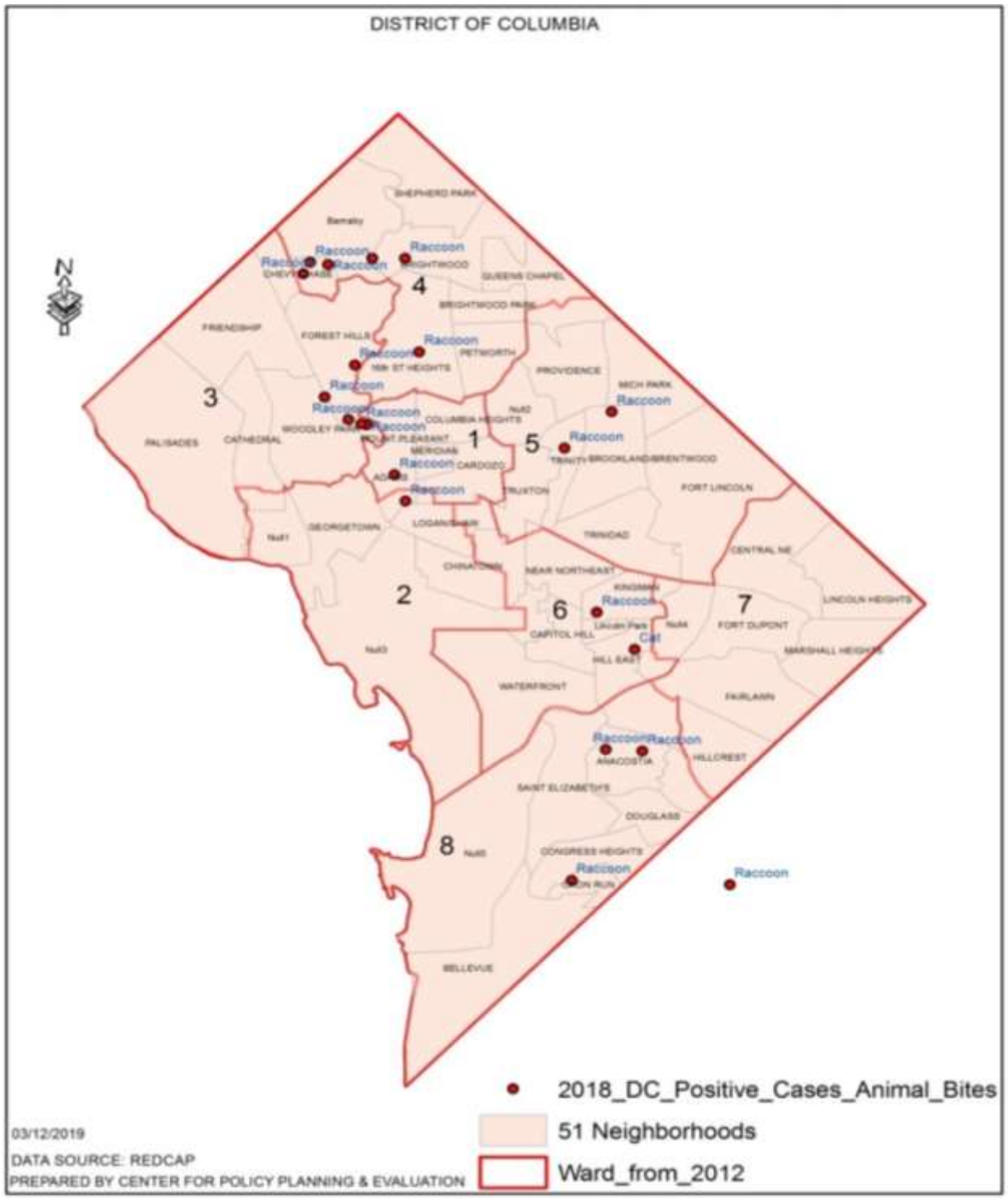

Figure 4. Cases of rabies in wild and domestic animals by zip code— DC, 2018

The raccoon variant of rabies virus is known to be enzootic in eastern US. Since almost all the positive animals in DC are raccoons, we only anticipate seeing the Eastern Raccoon rabies variant. For surveillance purposes, a representative sample of positive raccoons is sent to CDC for variant typing yearly. The number of raccoons submitted for rabies testing did see a decrease compared to last year, however, this likely does not represent a significant decrease in exposure risk since wildlife continue to account for >90 % of rabid animals reported in the US[2].

It is important to note that rabies prevalence data presented in this report may not accurately reflect the true prevalence in DC as it is based only on animal encounters that are *reported* to DC Health. In DC, dogs consistently represent the largest proportion of rabies samples submitted which may have some relation to the fact that human-domestic animal encounters are more frequent than human-wildlife encounters.

Rabies is almost 100% fatal once symptoms develop, however, it is also 100% preventable with appropriate vaccination. Canine rabies was successfully controlled during the late 1970s and the number of human rabies cases have dramatically reduced as a result[2]. The provision of human post-exposure prophylaxis (PEP) and pre-exposure vaccinations for those at-risk, such as veterinarians, prevents rabies infection even when someone has been exposed. For healthy people who have never been vaccinated against rabies, PEP consists of immediate wound washing, and administration of human rabies immune globulin along with 4 doses of rabies vaccine on days 0, 3, 7, and 14[2].

In cases of a potential rabies virus exposure to a person from a domestic animal such as a cat or dog, a 10-day animal observation period is recommended. While most domestic animals in DC are appropriately vaccinated as mandated, a quarantine is still required in order to make sure the animal is not at risk for having passed on rabies to a person. Appropriate reporting and monitoring of the biting animal can prevent someone from receiving unnecessary PEP. In cases of a person exposed to wildlife, risk of rabies transmission is determined by rabies testing if the animal is available[2]. In either case, if an animal is not available, there remains a risk for rabies exposure, and PEP is recommended.

DC Health continues to work to prevent human rabies cases through the promotion of rabies vaccination of all dogs and cats residing in the District, animal control programs, appropriate rabies PEP recommendations, and education of healthcare professionals and the public. For more information, please visit https://dchealth.dc.gov/service/rabies-and-animal-exposures.

1. Cdc.gov. (2018). New Rapid Rabies Test Could Revolutionize Testing and Treatment | CDC Online Newsroom | CDC. [online] Available at: https://www.cdc.gov/media/releases/2018/p0516-rapid-rabies-test.html [Accessed 26 Aug. 2019].
2. Ma, X., Monroe, B., Cleaton, J., Orciari, L., Li, Y., Kirby, J., Chipman, R., Petersen, B., Wallace, R. and Blanton, J. (2018). Rabies surveillance in the United States during 2017. Journal of the American Veterinary Medical Association, 253(12), pp.1555-1568.